# DEPARTMENT OF ENVIRONMENTAL CONSERVATION

# SIGNIFICANT PERMIT REVISIONS TO

# AIR QUALITY OPERATING PERMIT 84TVP01

# For XTO Energy Inc., Platform A

Permit No. 84TVP01 Issue Date: September 11, 2001
Revision Date: August 15, 2002 Expiration Date: September 10, 2006

The Department of Environmental Conservation, under the authority of AS 46.14 and 18 AAC 50, issues a significant operating permit revision to the Permittee, **XTO Energy Inc.**, for the operation of **Platform A**.

The permit satisfies the obligation of the owner and operator to obtain an operating permit as set out in AS 46.14.130(b).

As required by AS 46.14.120(c), the Permittee shall comply with the terms and conditions of this operating permit.

John F. Kuterbach, Manager
Air Permits Program

**The following portions of permit 84TVP01 are revised as follows:**

## *Fee Requirements*

**1. General.** The Permittee shall pay assessed fees in accordance with AS 46.14.240 -- 250 and 18 AAC 50.400 -- 420.

[18 AAC 50.350(c) & 18 AAC 50.400 – 420, 1/18/97]

**2. Assessable Emissions.** The Permittee shall pay to the department an annual emission fee based on the facility's assessable emissions. The assessable emission fee rate is listed in 18 AAC 50.410(b). The Department will assess fees for each ton of air contaminants that the facility emits or has the potential to emit in quantities greater than 10 tons per year. The quantity for which fees will be assessed is either

2.1 the facility's projected annual rate of emissions that will occur from July 1 to the following June 30, based upon previous calendar year actual annual emissions **emitted during the most recent calendar year or another 12 month period approved in writing by the department**, when demonstrated by:

a. an enforceable test method described in 18 AAC 50.220;

b. material balance calculations;

c. Emission factors from EPA's publication AP-42, Vol. I, adopted by reference in 18 AAC 50.035; or

d. other methods and calculations approved by the department; or

2.2 the facility's assessable emissions of 1,527 TPY (1,005 tons of $NO_x$, 105 tons of $SO_2$, 327 tons of CO, 35 tons of PM-10 and 55 tons of VOCs).

[18 AAC 50.350(c) & 18 AAC 50.410, 1/18/97]

**3. Assessable Emission Estimates.** Emission fees will be assessed as follows:

3.1 No later than March **31** ~~30~~ of each year, the Permittee may submit an estimate of the facility's assessable emissions to ADEC, Air Permits Program, ATTN: Assessable Emission Estimate, 410 Willoughby Ave., Juneau, AK 99801-1795. The submittal must include all of the assumptions and calculations used to estimate the assessable emissions in sufficient detail so the department can verify the estimates, or

3.2 If no estimate is received on or before **March 31** ~~June 30~~ of each year, emission fees for the next fiscal year will be based on the potential to emit set forth in condition 2.2.

[18 AAC 50.350(c) & 18 AAC 50.410, 1/18/97]

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**Table 1 Source Inventory**

| ID | Source Name | Source Description | Rating/Size | Install Date |
|---|---|---|---|---|
| **Gas Fired Turbines** | | | | |
| 1 | A-WF2 Gas Turbine Gen. | Solar Saturn, TS-1001S | 1100 Hp | 1969 |
| 2 | A-YC1 Gas Turbine Gen. | Solar Saturn, TS-1001S | 1100 Hp | 1972 |
| **Gas Fired Engines** | | | | |
| 3 | AC Pwr. Gen. A-AC4 | Waukesha G5788 | 603 Hp | 1965 |
| 4 | AC Pwr. Gen. A-AC5 | Waukesha G5788 | 603 Hp | 1965 |
| 5 | AC Pwr. Gen. A-AC6 | Waukesha G5788 | 603 Hp | 1965 |
| 6 | Compressor A-CB1 | Cooper-Bessemer GMVA-8 | 1,100 Hp | 1967 |
| 7 | Compressor A-CB2 | Cooper-Bessemer GMVA-8 | 1,100 Hp | 1967 |
| 8 | Compressor A-CLRK1 | HMB-8 | 440 Hp | 1967 |
| **Diesel Fired Engines** | | | | |
| 9 | DC Pwr. Generator P-DC1 | Cat. D399 | 1000 Hp | 1987-R |
| 10 | Emerg. Air Comp A-EAC1 | Cat. D343 | 73 Hp | 1987 |
| 11 | Rig Power A-ACDC1 | Cat. D399 | 1000 Hp | 1990-R |
| 12 | DC Rig Power A-DC2 | Cat. D399 | 1000 Hp | 1990-R |
| 13 | Crane Engine A-EC1 | Detroit Diesel 8V92 | 295 Hp | 1990-R |
| 14 | Crane Engine A-WC1 | Detroit Diesel 8V92 | 295 Hp | 1989-R |
| **Miscellaneous** | | | | |
| 15 | Flare | | | 1965 |
| 16 | Emergency Lt. Wtr. Pump | N/A | 190 Hp | 1970 |

*Sulfur Compound Emissions*

**6.** The Permittee shall not cause or allow sulfur compound emissions, expressed as $SO_2$, from Source IDs 1–16 to exceed 500 PPM averaged over three hours.

[18 AAC 50.055(c), 1/18/97; 18 AAC 50.350(d)(4), 6/21/98]
[18 AAC 50.040(e), 1/18/97]

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6.2 Fuel Gas

a. Obtain a semiannual statement or receipt from the fuel supplier certifying the fuel gas $H_2S$ concentration in ppm. If a certificate is not available from the supplier, then analyze a representative sample of the fuel semiannually to determine the sulfur content using 40 CFR 60, Appendix A, Method 11**, or GPA Standard 2377-86**.

## *Facility-Wide Requirements*

### PSD Avoidance Limits

The Permittee requested condition 7 for Source IDs 13, 14 and 16 in order to avoid classification as a Prevention of Significant Deterioration Major Facility. The operational limits below are intended to prevent the facility from exceeding the 40 tpy increment for nitrogen oxides.

**7.** The Permittee shall limit the operating hours for Source IDs 13, 14 and 16 as shown in Table 2:

**Table 2 Operational Limits**

| Source ID | Source Description | Operating Hrs Limit in any consecutive 12-month period |
|---|---|---|
| 13 **and** **14** | Detroit Diesel 8V92 | **4320** ~~1,460~~ **total hours for both engines** |
| ~~14~~ | ~~Detroit Diesel 8V92~~ | ~~1,460~~ |
| 16 | Emergency Lt. Wtr. Pump | 6 |

[18 AAC 50.350(e)(3), 1/18/97]

7.1 The Permittee shall maintain a monthly log for Source IDs 13, 14 and 16 showing the number of operating hours each month and the total hours in the previous consecutive twelve-month period.

[18 AAC 50.350(g)–(h), 1/18/97]

7.2 The Permittee shall submit summaries of the reports of condition 7.1 under condition 36.

[18 AAC 50.350(i), 1/18/97]

7.3 The Permittee shall report under condition 34 whenever the operating hours of any Source IDs 13, 14 or 16 exceeds the limits in condition 7.

[18 AAC 50.350(i), 1/18/97]

### Particulate Matter Testing (Source IDs 1?**14, and** 16)

**52.** The Permittee shall conduct source tests to determine the concentration of particulate matter (PM) in the exhaust of a source as follows:

52.1 Conduct a particulate matter source test according to the requirements set out in Section 9 no later than 90 calendar days after any time either of the following occurs, (unless a follow-up Method-9 test during the 90 days shows that the following no longer occurs):

a. A 60-minute Method -9 reading results in 13 or more 15-second readings with an opacity greater than 20%; or

b. A 60-minute Method -9 reading results in an average opacity that is greater than 12% for a source with an exhaust stack diameter that is less than 21 inches.

52.2 During each PM source test, observe the exhaust for 60 minutes in accordance with Section 14 and submit a summary of these observations with the source test report.

[18AAC 50.350(g)-(i), 1/18/97]

## Reporting Requirements

**53.** The Permittee shall, within 180 calendar days after the effective date of this permit, record and report the exhaust stack diameter of each Source IDs 1? **14, and** 16 and report this information to the department with the first or second facility operating report required by condition 36.

[18AAC 50.350(g)-(i), 1/18/97]

**54.** The Permittee shall notify the department in each facility operating report required by condition 36, which visible-emission plan in condition 49 was used for each source. The Permittee shall also submit with the facility operating report copies of the observation results (i.e. opacity readings) for each source that used the Method-9 Plan. The Permittee shall also indicate in the facility operating report the number of calendar days that smoke was observed for each source that used the Smoke/No-Smoke Plan.

[18AAC 50.350(g)-(i), 1/18/97]

**55.** Report under condition 34 if

55.1 a 60 minute opacity observation results in:

a. 13 or more 15-seconds readings with an opacity greater than 20%;

b. a 60-minute average opacity that is greater than 12% for a source with an exhaust stack diameter that is less than 21 inches; or

55.2 the results of a source test for particulate matter exceeds the particulate matter emission limit.

[18 AAC 50.350(g) – (i), 1/18/97]

## ~~Visible Emissions Observations for Flares (Source ID 15)~~

~~**56.** Within 3 daylight hours of the time when the vapor recovery unit (VRU) goes out of service, observe each of the flares for the presence or absence of visible emissions. If visible emissions are present in the exhaust, take corrective action within 24 hours, and make another observation after completing the corrective action. If visible emissions remain present in the exhaust, conduct a daily Method-9 observation of the source beginning no later than 5 days after completing the corrective action, and continuing until the VRU is restored to service.~~

~~[18 AAC 50.350(g) – (i), 1/18/97]~~

~~**57.** Record the following information in a written log for each VRU outage, and submit copies of the log upon request of the department:~~

~~a. Starting and ending times of each VRU outage;~~

~~b. From Table 1 Source Inventory of this permit, the ID of the source observed;~~

~~c. Date and time of each visible emissions observation performed;~~

~~d. Whether visible emissions are present or absent in the exhaust;~~

~~e. Date, time and nature of any corrective action taken to reduce visible emissions;~~

~~f. Date, time and result of any Method 9 tests performed;~~

~~g. Name, title and signature of the person making the observation(s).~~

[18 AAC 50.350(g)-(i), 1/18/97]

# Alaska Department of Environmental Conservation

# Air Permits Program

# August 15, 2002

# XTO Energy Inc.

# Platforms A and C

# LEGAL AND FACTUAL BASIS

# For Significant Permit Revisions to

# Permit No. 84TVP01 and

# Permit No. 85TVP01

# Administrative Revision to Permit No. 85TVP01

**Prepared by – Bill Walker**

XTO Inc. appealed its operating permits for its two Cook Inlet platforms, Platforms A and C. The Department of Environmental Conservation (the department) has agreed to make changes to the permit for three of the issues in the appeal. Making the changes we have agreed to will require a significant permit revision using the procedures of 18 AAC 50.375. Because the department is already using those procedures, we are also making requested changes to PSD avoidance conditions in the same permit action.

XTO Inc. has also requested an adjustment to the date the annual compliance certification is due for Platform C. The department is making this change as an administrative revision.

## Appeal Issues

**Condition 3 – Emission Fees**
AS 46.14.250 and 18 AAC 50.410(b) direct the Permittee to pay emission fees for each fiscal year. Fees are to be based on either potential to emit, or on actual annual emissions.

The issue raised in the adjudication was that the dates in the condition were not consistent. Condition 3.1 requires reporting assessable emissions based on previous actual emissions by March 30 of each year, but condition 3.2 allows until June 1. The condition is changed to be consistent with the recently adopted standard permit condition, which says March 31 in both 3.1 and 3.2. The purpose of this date is to allow emission estimates to be based on the previous calendar year. It gives the Permittee 3 months to assemble data and calculate the estimate; the department then has three months to verify the calculations and enter the estimate into the department's billing system.

**Condition 6.2a -- Hydrogen Sulfide Monitoring**
The Permittee has requested to use GPA Standard 2377-86 for measuring hydrogen sulfide in fuel gas. The department is making this change. The condition is for monitoring compliance with the 500 ppm $SO_2$ emission standard. The requested method is not a precise method, so the department has not adopted it by reference. However, measurements to date have shown that the $H_2S$ concentrations in fuel gas used on the platform are well below the concentrations necessary to assure compliance, even considering the inaccuracy of the method.

**Conditions 49 – 57**
Conditions 52 – 55 are monitoring, record keeping, and reporting for particulate matter, which include EPA Method 5. Method 5 is not feasible for flares. Therefore, these conditions are changed so that they do not apply to the flare.

Conditions 56 and 57 are deleted. They were premised on the existence of a vapor recovery unit (VRU) associated with the flare. The department concluded that a VRU

would inherently prevent the flare from smoking. So conditions 56 and 57 would only require monitoring when the VRU was down.

However, the platform does not have a vapor recovery unit connected to the flare. Instead, a separator referred to as a flare scrubber removes liquids from the gas before it reaches the flare. The separator has not been shown to inherently assure compliance with opacity and PM standards. Because of its design it is unlikely to be off line in the same way as a VRU. Therefore the condition is not appropriate.

Conditions 49 – 51 are retained without change. They apply the default opacity monitoring to all sources, including the flare. Therefore the permit relies on conditions 49 – 51 for monitoring, record keeping, and reporting on opacity for the flare, instead of the inappropriate conditions 56 and 57.

## Changes to PSD Avoidance Conditions

XTO has requested an increase in allowable hours of operations for crane engines.

In 1998, the previous owner of Platforms A and C, Shell Western E & P Inc., requested, in its operating permit application, limitations on hours of operation of crane engines to retroactively avoid PSD for earlier changes to the facility. The department included those limits in the operating permits issued for those platforms on September 11 and September 7, 2001. XTO is requesting an increase in those hours to accommodate planned drilling operations. In a letter dated April 12, 2002, XTO has certified calculations demonstrating that the change will not exceed PSD modification thresholds.

The department has verified that the requested changes will not exceed the PSD modification thresholds, considering the remaining PSD bank accounts reported by XTO and accepted by the department when we issued the original operating permits.

For Platform A, the calculations assume that none of the bank account has been used up, because no equipment changes have been made since the owners started to keep reliable records. The increase in actual emissions from the change to this enforceable limit is computed as the new potential emissions minus the actual emissions from those sources during the most recent 24 months. All increases are less than the PSD modification thresholds and are given in the following tables.

Note: These calculations assume the operating hours limits apply independently to each engine, as in the public comment draft. Based on comments the limit was changed to a combined limit for both engines. Since the engines are identical, the change does not affect the total allowable emissions.

| **Platform A $NO_x$ Emissions (Tons per year)** | | | |
|---|---|---|---|
| Source | Previous Actual Emissions | New Allowable Emissions | Net Increase |
| A-WC1 Diesel Crane Engine | 6.301 | 9.877 | 3.576 |
| A-EC1 Diesel Crane Engine | 6.013 | 9.877 | 3.864 |
| | | Total net increase | 7.4 |
| | | Remaining Bank Account | 32.6 |

| **Platform A PSD Bank Account (tons per year)** | | |
|---|---|---|
| Pollutant | Net Emissions Increase | Remaining Bank Account |
| $NO_x$ | 7.4 | 32.6 |
| $SO_2$ | 0.5 | 39.5 |
| CO | 1.6 | 98.4 |
| PM | 0.5 | 14.5 |
| VOC | 0.6 | 39.4 |

For Platform C, the calculations are the same except that they also take into account the replacement of three emissions sources as shown in the following table. Calculations for these equipment changes also compare previous actual emissions to new allowable emissions.

Assumptions used for these calculations are provided in the April 12, 2002 letter from Nina Hutton to Bill Walker.

| **Platform C $NO_x$ Emissions (Tons per year)** | | | |
|---|---|---|---|
| Source | Previous Actual Emissions | New Allowable Emissions | Net Increase |
| C-WC1 Diesel Crane Engine | 5.1 | 13.7 | 8.6 |

| **Platform C PSD Bank Account (tons per year)** | | | |
|---|---|---|---|
| Pollutant | Net Emissions Increase from Current Change | Previous Net Emission Increases [from replacement of sources 5 and 12 and one insignificant boiler] | Remaining Bank Account |
| $NO_x$ | 8.6 | 23.1 | 8.3 |
| $SO_2$ | 0.57 | 0.36 | 39.1 |
| CO | 1.9 | 30.5 | 67.6 |
| PM | 0.6 | 0.5 | 13.9 |
| VOC | 0.7 | 0.5 | 38.8 |

## Administrative Revision

The department revised condition 37 of 85TVP01 for Platform C so that the due data for the annual compliance certification will coincide with that for the semiannual operating report. The period covered by the certification is unchanged. Since the new certification date is earlier, the change is made as an administrative revision under 18 AAC 50.370(a)(7). This revision was requested in the August 7, 2002 letter from Nina Hutton of XTO to Bill Walker.